

AMENDMENTS TO THE SPECIFICATION WITH MARKINGS TO SHOW CHANGES MADE

Amend the following paragraph(s):

[0005] --Structures for heat dissipation involve, e.g., heat dissipation bases, carriers and pole pieces of power circuits, laser diode carriers, heat dissipation members and encapsulation housings of hybrid circuits of power microelectronics, or hyper frequency circuits. Also included here are cooling units, e.g. water-circulated micro-cooling devices, heat sinks on circuit boards, heat pipes or the like. In the electronic field, the structures involved here are connected for heat dissipation to insulating substrates of ceramics, such as e.g. aluminum oxide or with semiconductors such as e.g. silicon or gallium arsenide. Operation of such electronic components may result in a significant generation of heat so that a rapid dissipation of heat is necessary to prevent excessive heating. Therefore, the use of a composite of high heat conductivity λ of at least above $60 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$ is proposed. However, the encountered temperature is still elevated, and in the event the expansion coefficient α of the composite is different enough from the ceramic substrate, the latter is exposed to mechanical stress that ultimately may lead to fractures so that the conductivity of the arrangement and their electric insulation are adversely affected. Therefore, the composite should have an expansion coefficient that is compatible with aluminum oxide, e.g. below ~~$16 \cdot 10^{-6} \text{ K}^{-1}$~~ $16 \cdot 10^{-6} \text{ K}^{-1}$ in the temperature range of 30-400 °C.--.

[0009] -- According to one aspect of the present invention, a heat dissipating structure includes a composite having a thermal expansion coefficient between 30 °C and 250 °C in a range from ~~$[2 \text{ to } 13 \cdot 10^{-6} \text{ K}^{-1}]$~~ $2 \cdot 10^{-6} \text{ K}^{-1} \text{ to } 13 \cdot 10^{-6} \text{ K}^{-1}$, a volume mass of less than $3000 \text{ kg} \cdot \text{m}^{-3}$, and a conductivity equal to or greater than $113 \text{ W} \cdot \text{m}^{-1} \cdot \text{K}^{-1}$, wherein the composite includes a matrix component, which is made of metal, polymer, or resin, and a reinforcement component, which contains microfibers at a volume proportion in a range from 5 to 90% and nanofibers at a volume proportion from 1 to 60%, wherein the composite is

obtained through infiltration of the reinforcement component with the matrix component, and a surface layer applied onto the composite and having entirely or at least partially a metallic character.--.

[0016] -- On the other hand, a potential use of such switching circuits in motor vehicles makes it necessary to find materials that have a lowest possible density or volume mass, preferably less than $3000 \text{ kg}\cdot\text{m}^{-3}$, to reduce the energy consumption during travel. Moreover, as the switching circuits are sensitive to the environment, the material should exhibit a suitable amagnetic character as well as a good sealing capability against the external medium.--.

[0025] -- The composite 2 has, at least in two directions, an expansion coefficient α between 30°C and 250°C in the range from $[[2 \text{ to } 13 \cdot 10^{-6} \text{ K}^{-1}]]$ $2 \cdot 10^{-6} \text{ K}^{-1}$ to $13 \cdot 10^{-6} \text{ K}^{-1}$, a density or volume mass of less than $3000 \text{ kg}\cdot\text{m}^{-3}$, and a thermal conductivity λ equal to or greater than $113 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, and has a matrix component made of metal, such as pure aluminum, pure magnesium, pure copper and alloys thereof, or made of polymers or resins, and a reinforcement component made of a felt or a preform of microfibers at a volume proportion in the range of 5 to 90% and nanofibers at a volume proportion in the range of 1 to 60%. The composite 2 is hereby produced through infiltration of the reinforcement component with the matrix component, i.e. metal in liquid state, or polymers or resins in plasticized or non-cured state.--.